

Appendix 3: Measurement Procedure

A. Preliminary Measurement For Portable Devices

For portable devices, the following procedure was performed to determine the maximum emission axis of EUT:

1. With the receiving antenna is H polarization, rotate the EUT in turns with three orthogonal axes to determine the axis of maximum emission.
2. With the receiving antenna is V polarization, rotate the EUT in turns with three orthogonal axes to determine the axis of maximum emission.
3. Compare the results derived from above two steps. So, the axis of maximum emission from EUT was determined and the configuration was used to perform the final measurement.

B. Final Measurement

1. Setup the configuration per figure 5 and 6 for frequencies measured below and above 1 GHz respectively.
2. For emission frequencies measured below 1 GHz, a pre-scan is performed in a shielded chamber to determine the accurate frequencies of higher emissions will be checked on a open test site. As the same purpose, for emission frequencies measured above 1 GHz, a pre-scan also be performed with a 1 meter measuring distance before final test.
3. For emission frequencies measured below and above 1 GHz, set the spectrum analyzer on a 100 kHz and 1 MHz resolution bandwidth respectively for each frequency measured in step 2.
4. The search antenna is to be raised and lowered over a range from 1 to 4 meters in horizontally polarized orientation. Position the highness when the highest value is indicated on spectrum analyzer, then change the orientation of EUT on test table over a range from 0 ° to 360 ° with a speed as slow as possible, and keep the azimuth that highest emission is indicated on the spectrum analyzer. Vary the antenna position again and record the highest value as a final reading.

Note : A band pass filter was used to avoid pre-amplifier saturated when measure TX operation mode in frequency band above 1 GHz.

5. Repeat step 4 until all frequencies need to be measured were complete.
6. Repeat step 5 with search antenna in vertical polarized orientations.
7. Check the three frequencies of highest emission with varying the placement of cables associated with EUT to obtain the worse case and record the result.

Figure 1 : Frequencies measured below 1 GHz configuration

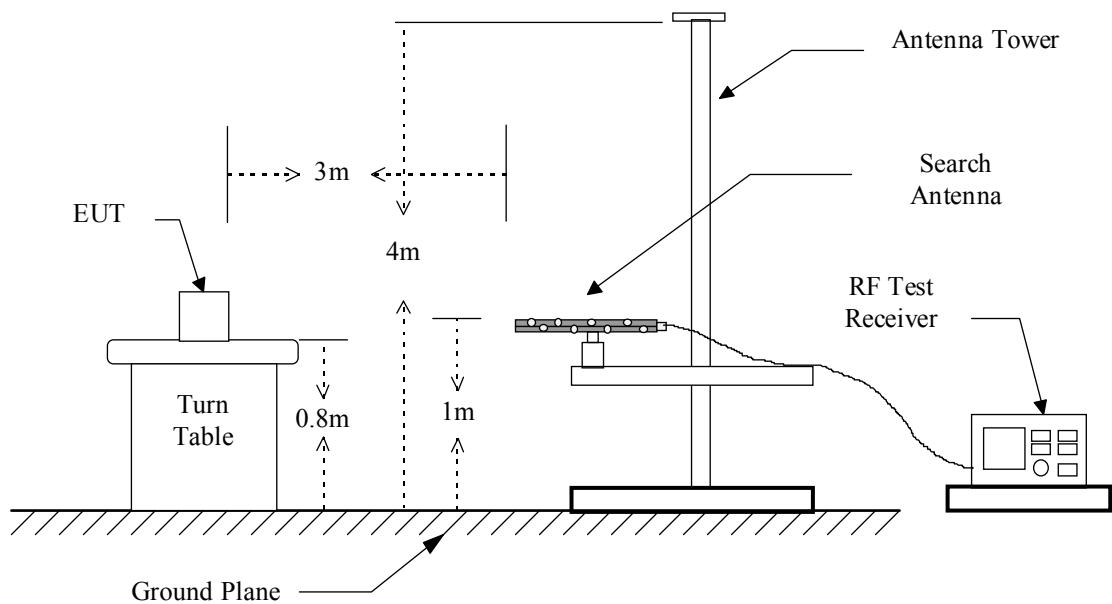
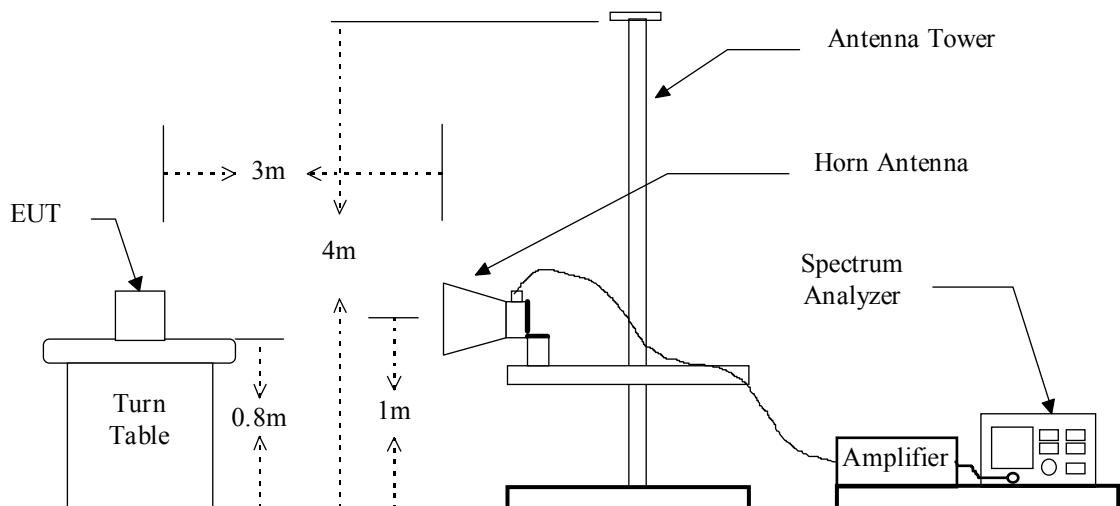


Figure 2 : Frequencies measured above 1 GHz configuration



Appendix 4 : Fundamental Data

A.

Operation Mode : TX

Fundamental Frequency : 2402 MHz

Test Date : Jul. 01, 2002

Temperature : 25 °C

Humidity : 50 %

Frequency (MHz)	Reading (dBuV)				Factor (dB) Corr.	Result @3m (dBuV/m)		Limit @3m (dBuV/m)		Margin (dB)	Table Deg. (Deg.)	Ant. High (m)
	H		V			Peak	Ave	Peak	Ave			
2402.000	84.4	83.2	92.7	91.5	-3.1	89.6	88.4	114.0	94.0	-5.6	150	1.40
4804.000	44.2	***	44.8	***	2.5	47.3	***	74.0	54.0	-6.7	90	1.30
7206.000	45.8	36.3	46.5	39.2	5.7	52.2	44.9	74.0	54.0	-9.1	90	1.30
9608.000	---	---	---	---	7.2	---	---	74.0	54.0	---	---	---
12010.000	---	---	---	---	9.2	---	---	74.0	54.0	---	---	---
14412.000	---	---	---	---	11.5	---	---	74.0	54.0	---	---	---
16814.000	---	---	---	---	11.8	---	---	74.0	54.0	---	---	---
19216.000	---	---	---	---	8.9	---	---	74.0	54.0	---	---	---
21618.000	---	---	---	---	9.7	---	---	74.0	54.0	---	---	---
24020.000	---	---	---	---	10.3	---	---	74.0	54.0	---	---	---

Note :

1. Item of margin shown in above table refer to average limit.
2. Remark “---” means that the emission level is too low to be measured, with a preamplifier of 35 dB.
3. Measuring data showed on above table was derived with peak detector function.
4. It is considered that the results of average comply with average limit when measuring data with a peak function detector meet the average limit. Mark “***” means that Peak result is meet average limit.
5. The expanded uncertainty of the radiated emission tests is 3.53 dB.

B.

Operation Mode : TX/RX

Fundamental Frequency : 2441 MHz

Test Date : Jun. 06, 2002

Temperature : 25 °C

Humidity : 67 %

Frequency (MHz)	Reading (dBuV)				Factor (dB) Corr.	Result @3m (dBuV/m)		Limit @3m (dBuV/m)		Margin (dB)	Table Deg. (Deg.)	Ant. High (m)
	H		V			Peak	Ave	Peak	Ave			
2441.000	85.1	83.6	91.8	90.5	-2.9	88.9	87.6	114.0	94.0	-6.4	270	1.10
4882.000	43.8	***	44.2	***	2.7	46.9	***	74.0	54.0	-7.1	270	1.30
7323.000	45.8	39.0	48.2	41.5	5.9	54.1	47.4	74.0	54.0	-6.6	180	1.40
9764.000	---	---	---	---	7.3	---	---	74.0	54.0	---	---	---
12205.000	---	---	---	---	9.3	---	---	74.0	54.0	---	---	---
14646.000	---	---	---	---	11.6	---	---	74.0	54.0	---	---	---
17087.000	---	---	---	---	13.3	---	---	74.0	54.0	---	---	---
19528.000	---	---	---	---	8.5	---	---	74.0	54.0	---	---	---
21969.000	---	---	---	---	9.9	---	---	74.0	54.0	---	---	---
24410.000	---	---	---	---	10.7	---	---	74.0	54.0	---	---	---

Note :

1. Item of margin shown in above table refer to average limit.
2. Remark “---” means that the emission level is too low to be measured, with a preamplifier of 35 dB.
3. Measuring data showed on above table was derived with peak detector function.
4. It is considered that the results of average comply with average limit when measuring data with a peak function detector meet the average limit. Mark “***” means that Peak result is meet average limit.
5. The expanded uncertainty of the radiated emission tests is 3.53 dB.

C.

Operation Mode : TX/RX

Fundamental Frequency : 2480 MHz

Test Date : Jun. 06, 2002

Temperature : 25 °C

Humidity : 67 %

Frequency (MHz)	Reading (dBuV)				Factor (dB) Corr.	Result @3m (dBuV/m)		Limit @3m (dBuV/m)		Margin (dB)	Table Deg. (Deg.)	Ant. High (m)
	H		V			Peak	Ave	Peak	Ave			
2480.000	85.1	84.3	91.8	90.3	-2.8	89.0	87.5	114.0	94.0	-6.5	90	1.30
4960.000	44.1	***	44.8	***	2.8	47.6	***	74.0	54.0	-6.4	230	2.00
7440.000	46.0	36.1	46.7	39.5	6.1	52.8	45.6	74.0	54.0	-8.4	90	1.30
9920.000	---	---	---	---	7.4	---	---	74.0	54.0	---	---	---
12400.000	---	---	---	---	9.4	---	---	74.0	54.0	---	---	---
14880.000	---	---	---	---	11.5	---	---	74.0	54.0	---	---	---
17360.000	---	---	---	---	15.2	---	---	74.0	54.0	---	---	---
19840.000	---	---	---	---	8.6	---	---	74.0	54.0	---	---	---
22320.000	---	---	---	---	10.2	---	---	74.0	54.0	---	---	---
24800.000	---	---	---	---	11.0	---	---	74.0	54.0	---	---	---

Note :

1. Item of margin shown in above table refer to average limit.
2. Remark “---” means that the emission level is too low to be measured, with a preamplifier of 35 dB.
3. Measuring data showed on above table was derived with peak detector function.
4. It is considered that the results of average comply with average limit when measuring data with a peak function detector meet the average limit. Mark “***” means that Peak result is meet average limit.
5. The expanded uncertainty of the radiated emission tests is 3.53 dB.